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From: GREENFIELD Sarah
Sent: Sat 2/20/2016 1:15:37 AM
Subject: Considerations for FS Costs

Sean-

DEQ has worked with DSL's consultant, TIG, to perform a preliminary review of the cost estimates presented in the FS. Understanding that there is little time to further revise the costs, we wanted to elevate a few specific cost items that we think should be reviewed prior to issuing the revised plan.

Water Treatment

- EPA provides backup for water treatment costs related to transload facility development and runoff from dredged material stockpiles, but is unclear how additional water treatment needs (such as decant water from the barges) will be managed. Regardless of dredging method (i.e. mechanical or hydraulic) these water volumes may be significant and should be reflected in the costs. If these costs are already captured within an existing line item, then the cost worksheets should be updated to clarify.

Percentages of Total Project Cost Applied to Technology Assignment Construction Costs

- EPA applies a flat percentage of total capital cost to estimate various line items in their estimates such as project management, design, and contingency. This is a standard practice used in development of FS costs, however the percentages applied are generally low given the complexities and duration of this project and are not in line with the typical ranges provided in the EPA's guidelines for developing FS cost estimates (EPA 2000). Since the magnitude of Portland Harbor exceeds the project values provided as examples in the guidance, additional justification should be provided to support the FS assumptions. Also, although this project is estimated to cost over \$1B, it will likely be implemented in smaller pieces, so the percentages assumed should be on scale with the anticipated SDU areas and associated costs.

1. Mob/Demob (1.6%) – This was calculated based on Lower Duwamish values. Suggest additional case studies be reviewed. Inefficiencies of multiple dredge seasons and coordination of 3 dredges will likely drive this up above 10%.
2. Scope and Bid Contingency (20% combined) – This is at the low end of the recommended range, as indicated, and should be increased to account for the additional complexity of over-water work. Suggest 30%.

3. Project Management/Construction Management (5% combined) – Again on the low end. Suggest 10% each.

4. Remedial Design (2%) – The higher the complexity the higher for potential scope creep. This number is very low and is typically in the range of 15%.

We appreciate your consideration of these cost items and look forward to hearing how these ultimately get resolved.

Thanks,

Sarah Greenfield, PE

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